

AMENDMENTSAmendments to the Claims:

Please amend the claims according to the following listing of the claims.

Listing of the claims:

1. (currently amended) ~~A process for the purification of ionic liquids which are contaminated with a polar, high boiling compound which cannot be removed completely from the ionic liquids by way of a distillation, which process comprises providing a mixture comprising the ionic liquids and the polar, high boiling compound, and removing the polar, high boiling compound from the ionic liquids by adsorptive separation~~ A process for purifying a mixture of at least one ionic liquid and at least one impurity,
wherein the at least one impurity is a substance having a vapor pressure in the mixture that prohibits complete removal of the substance from the mixture by distillation, and/or
wherein the at least one impurity is a substance that interacts with the at least one ionic liquid so as to prohibit complete removal of the substance from the mixture by distillation,
said process comprising removing the at least one impurity from the mixture by adsorptive separation, and obtaining the resultant at least one ionic liquid.

2. (previously presented) A process as claimed in claim 1, wherein the separation is carried out by means of ion exchange.
3. (previously presented) A process as claimed in claim 1, wherein the separation is carried out by means of chromatography.
4. (previously presented) A process as claimed in claim 3, wherein the separation is carried out by means of a continuous chromatographic process.
5. (canceled)
6. (previously presented) A process as claimed in claim 1, wherein water, methanol, ethanol, 1-propanol or isopropanol or a mixture thereof is used as solvent.
7. (previously presented) A process as claimed in claim 1, wherein reversed phase silica gels, resins, ion exchangers, zeolites, aluminum oxides or activated carbon are used as stationary phases.
8. (currently amended) An adsorption separation process for removing an impurity from a mixture comprising an ionic liquid ~~contaminated with said and the~~ impurity, wherein ~~said impurity is a polar, high boiling compound which cannot be removed completely from the ionic liquid by way of a distillation and/or said compound has a vapor pressure of less than about 10~~

~~mbar at room temperature,~~

wherein the impurity is a substance having a vapor pressure in the mixture that prohibits complete removal of the substance from the mixture by distillation, and/or

wherein the impurity is a substance that interacts with the ionic liquid so as to prohibit complete removal of the substance from the mixture by distillation,

wherein the ionic liquid has an anion and cation, the cation comprising at least one five- or six-membered heterocycle containing at least one phosphorus or nitrogen atom; and

wherein the process comprises a first step of contacting the contaminated ionic liquid with a resin, and a second step of separating the purified ionic liquid from the resin.

9. (currently amended) The separation process of claim 8, wherein the resin is at least one of an ion exchange resin and an ~~absorption~~ adsorption resin.
10. (previously presented) The separation process of claim 8, wherein the separation is carried out by chromatography.
11. (previously presented) The separation process of claim 8, further comprising a step of removing low boiling

compounds by evaporation.

12. (previously presented) The separation process of claim 8, wherein water, methanol, ethanol, 1-propanol, isopropanol or a mixture thereof is used as solvent.
13. (previously presented) The separation process of claim 8, wherein the anion is a halide.
14. (canceled)
15. (canceled)
16. (canceled)
17. (currently amended) A process as claimed in claim 8, wherein the polar, high boiling compound cannot be removed completely from the ionic liquids by way of a distillation and said compound has the impurity is a substance having a vapor pressure of less than about 10 mbar in the mixture at room temperature.
18. (currently amended) An adsorption separation process for removing an at least one impurity from an a contaminated ionic liquid,
contaminated with said impurity, wherein said impurity is a polar compound which cannot be removed completely from the ionic liquid by way of a distillation,
wherein the at least one impurity is a substance having a vapor pressure in a mixture comprising the at

least one impurity and the at least one ionic liquid that prohibits complete removal of the substance from the mixture by distillation, and/or

wherein the at least one impurity is a substance that interacts with the at least one ionic liquid in a mixture comprising the at least one impurity and the at least one ionic liquid so as to prohibit complete removal of the substance from the mixture by distillation,

which process comprises

~~firstly providing the contaminated ionic liquid by~~

- (a) ~~by~~-separating volatile components from a mixture comprising the ionic liquid, ~~said the~~ volatile components and the at least one impurity, by means of evaporation or rectification, and/or
- (b) ~~by~~-separating non-polar components from a mixture comprising the ionic liquid, ~~said the~~ non-polar components and the at least one impurity, by means of extraction with a non-polar organic solvent,

~~subsequently contacting the contaminated ionic liquid with a resin, and then separating the purified ionic liquid from the resin~~

removing the at least one impurity from the contaminated ionic liquid by adsorptive separation, and

obtaining the resultant at least one ionic liquid.

19. (canceled)
20. (currently amended) A process as claimed in claim 18, wherein the polar compound the at least one impurity has a vapor pressure of less than about 10 mbar at room temperature in a mixture comprising the at least one impurity and the at least one ionic liquid.
21. (new) A process according to claim 1, wherein the at least one impurity is a polar compound.
22. (new) A process according to claim 1, wherein the at least one impurity is a substance having a vapor pressure of less than about 10 mbar in the mixture at room temperature.
23. (new) A process according to claim 1, wherein the at least one impurity is a substance having a vapor pressure of less than 1 mbar in the mixture at room temperature.
24. (new) A process according to claim 1, wherein the at least one impurity is a polymer that has no measurable vapor pressure in the mixture at room temperature.